

Claims 1-4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Asakura et al. in view of Kubota et al. This rejection is respectfully traversed.

First, the Examiner admits that the combination of Asakura and Kubota “would result in an inoperative device.” Office Action at 5, lines 1-3. As such, the combination of references is not motivated by the references themselves as the inoperability would teach away from the combination. The asserted combination is improper.

In order to support the modification of a reference or a particular combination of references, the record must provide a teaching, suggestion or reason for doing so. “The absence of such a suggestion to combine is dispositive in an obviousness determination.” Gambro Lundia AB v. Baxter Healthcare Corp., 110 F.3d 1573, 1578-79, 42 USPQ2d 1378 (Fed. Cir. 1997); accord SmithKline Diagnostics, Inc. v. Helena Lab. Corp., 859 F.2d 878, 886-87, 8 USPQ2d 1468 (Fed. Cir. 1988) (one asserting that the claimed invention would have been obvious must “show some teaching or suggestion in the references to support their use in the particular claimed combination”). There is no motivation to combine the applied references to achieve the claimed invention—apart from the disclosure of instant application.

Moreover, the Examiner asserts that “it would have been obvious to one of ordinary skill in the art that the polarization angle must be changed by 45°.” Office Action at 5, lines 3-5. Personal hindsight is impermissible in an obviousness determination. See Kahn v. General Motors Corp., 135 F.3d 1472, 1479, 45 USPQ2d 1608 (Fed. Cir. 1998) (“[o]bviousness may not be established using

hindsight"); Nursery Supplies, Inc. v. Lerio Corp., 45 USPQ2d 1332, 1334 (Fed. Cir. 1997) ("Hindsight must be avoided."); Orthopedic Equip. Co. v. United States, 702 F.2d 1005, 1012, 217 USPQ 193 (Fed. Cir. 1983) ("It is wrong to use the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims Monday morning quarterbacking is quite improper when resolving the question of nonobviousness.").

The Examiner's assertion of obviousness relies on improper hindsight. Because neither Asakura nor Kubota disclose or suggest the use of the claimed optical rotation layer for changing the polarization angle by 45°, it is apparent that the Examiner is "combining the right references in the right way so as to achieve the result of the claims," which is improper. Orthopedic, 702 F.2d at 1012.

The optical rotation layer 2 of Asakura corresponds to the claimed first optical rotation layer. These optical rotation layers have the function of changing the polarization angle by 90° and consequently rotate P-wave into S-wave and vice versa. However, the claimed second optical rotation layer does not have the function of such rotation and therefore is substantially different from the optical rotation layer 2 of Asakura and the claimed first optical rotation layer. Thus, the claimed invention, which requires a second optical rotation layer as claimed, would not have been obvious to one having ordinary skill in the art, at the time the invention was made, given the asserted combination of Asakura and Kubota.

Moreover, as described in instant specification (page 2, lines 14-27), widely used liquid crystal displays, except for some small-sized televisions using a liquid crystal display, are so set that the axis (plane) of polarization is generally oblique relative to a vertical axis and a horizontal axis of the image plane of the liquid crystal display, i.e., generally along a diagonal line of the image plane in order to keep a bilateral symmetry of angle of visibility. Accordingly, it is impossible to prevent formation of the double image by using the conventional optical rotation film capable of rotating the plane of the polarization about 90°. In order to prevent formation of the double image, the use of a small-sized liquid crystal display having an axis (plane) of polarization vertical or horizontal in the image plane of the liquid crystal display, or a specially prepared liquid crystal display whose axis of polarization is adjusted only corresponding to the display system is required. The claimed invention was made in view of the above-mentioned drawback of conventional head-up display systems. It is an object of the claimed invention (see page 3, lines 1-6 of the specification) to provide an improved display system which is simple in construction and can effectively prevent formation of a double image to be recognized by an operator, even by using a usual liquid crystal display whose axis (plane) of polarization is inclined about 45° relative to a vertical axis on the image plane of the liquid crystal display. The above object of the claimed invention is satisfied by three essential elements of the claimed invention, that is, (a) a liquid crystal display having a plane (axis) of polarization inclined by 45°, (b) a first optical rotation layer for changing the polarization angle by 90°, and (c) a second optical

rotation layer for changing the polarization angle by 45°. Assuming arguendo, even if Asakura is properly combinable with Kubota, which is traversed above, the combination does not provide the above three essential elements of the claimed invention. Accordingly, withdrawal of the rejection is respectfully requested.

CONCLUSION

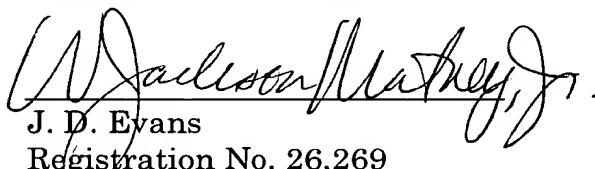
In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response; please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #3007/48504).

Respectfully submitted,

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PATENT

MARKED-UP VERSION TO SHOW CHANGES

IN THE CLAIMS

Please amend claim 3 as follows:

3. (Amended three times) A display system comprising:

- a transparent plate;
- a liquid crystal display for generating a display light of information, said display light having a plane of polarization inclined by an angle of about 45° relative to a vertical axis of an image plane of said liquid crystal display;
- a first optical rotation layer disposed to a first surface of said transparent plate, said optical rotation layer being adapted to optically rotate the plane of polarization of the display light incident thereon by an angle of about 90°, the display light from said first optical rotation layer being reflected from a second surface of said transparent plate and directed toward an eye of an operator; and
- a second optical rotation layer disposed between the image plane of said liquid crystal display and a [third] first surface of said transparent plate, said second optical rotation layer being adapted to optically rotate the plane of polarization of the display light from the liquid crystal display by an angle of about 45° and to allow P-polarized light to emanate toward said first optical rotation layer at Brewster's angle.

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